

Safety In Mines Research Advisory Committee

Project Summary : GAP 637

Project Title:	Technology transfer of winder ropes research (155 pages)		
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Category:	Gold and Platinum	Applied Research	Mine winder ropes

Summary

In the early 1980's, winder ropes research in South Africa gained new momentum when it was decided to investigate the validity of the regulations governing the strength of winder ropes. Although knowledge of, and experience with winder systems and winder ropes were available at the time that the research effort started, very little was actually written in the form of reports that could have been used as motivation for changes to the regulations.

Originally the research was sponsored collectively by the mining industry through the Chamber of Mines, and later through government levies raised and administered by the Safety in Mines Research Advisory Committee (SIMRAC). The CSIR (a semi-government organisation) was the initial co-ordinator of the research. Because of their intimate involvement in the project, both the CSIR and Anglo American Corporation also sponsored their own winder ropes related investigations from time to time. The reports on these "privately" sponsored investigations were made available to the research effort.

By the year 2000, more than 100 research reports had been produced. These reports either had some bearing on the new rope load factors that were included in the South African regulations, or were produced as a result of the changes introduced to the regulations. In total, the reports consist of more than 5 900 pages.

The main part of this document describes the events and history that led to the creation of this vast amount of research. The research reports that were produced are listed and a summary of the contents of each report is given in an appendix.

Principal findings

The research described in this report produced and established the following:

- ? New rope load factors and regulations for drum winder ropes were established.
- ? A code of practice for rope condition assessment was produced, rope discard criteria were investigated and magnetic rope testing instruments were evaluated.
- ? The winder code of practice that would allow better utilisation of drum winders as well as deep shaft hoisting was established.
- ? A code of practice for shaft sinking winders was established and used to sink two very deep shafts.
- ? New rope terminations were introduced.
- ? Winder and rope dynamics are well understood.
- ? Rope deterioration on a drum winder is far better understood.
- ? Uncertainties like winder motor fault torque and slack rope have been investigated.
- ? A large information base has been established.

Conclusions and recommendations

A large part of the SIMRAC investigations were concerned with rope discard and rope deterioration in order to verify and refine the requirements in the mentioned codes of practice. None of the recommendations in the SIMRAC reports has been implemented.



The author struggling through the mass of papers, reports and minutes of meetings that were produced in the 15 year period that was reviewed.